HERPETOLOGY.—*Contributions to the herpetology of Maryland and Delmarva, 15: The herpetofauna of Somerset County, Md.* Clyde F. Reed, Baltimore, Md. (Communicated by Doris M. Cochran.)

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Somerset County, Md., lies on the Delmarva Peninsula, bounded on the east (in part) and south by the Pocomoke Swamp and River, on the west by the Chesapeake Bay, and on the north by Wicomico County. A large portion of the county, especially the western, is marshy. The more inland portions toward the Pocomoke River are swampy. Between these two wet areas is the dry sandy portion. Therefore, the habitats, although they are all coastal soils, are either predominantly wet or predominantly dry.

Both Conant's *Checklist of the amphibians and reptiles of the Del-Mar-Va Peninsula* and McCauley's *Reptiles of Maryland and the District of Columbia*, both published in 1945, give very few records for any species of amphibians or reptiles from Somerset County. Along with Carroll and Caroline Counties in Maryland, this is one of the most poorly collected-in counties in the State. It is difficult to say whether their representation is due to inadequate collecting or species paucity. The counties to the north and east of Somerset, namely Wicomico and Worcester, are very well represented in species of herpetofauna. From the author's collecting in this county, it would appear that inadequate collections have been made. The author has been collecting in this county since 1938, mainly in the area about Waterloo Farm, at the Headwaters of Monie Creek, on the property of Philip Wolle of Princess Anne.

The published records for the amphibians and reptiles of Somerset County are quite meager. McCauley (l.c., 1945) lists five reptiles from the county: *Heterodon p. platyrhinos, Coluber c. constrictor, Lampropeltis g. getulus, Natrix s. sipedon* and *Malaclemys centrata concentrica*. Conant (l.c., 1945) lists five species of amphibians and reptiles from this county: *Pseudacris nigrita triseriata, Hyla c. crucifer, Rana clamitans, Rana pipiens* and *Coluber c. constrictor*.

Collections by the author and Philip Wolle indicate that there are at least 25 reptiles in the county. The records given herein may be considered as new to the county for all those species not mentioned above and additional records for all other species.

1. *Scaphiopus holbrooki holbrooki* (Harlan). North of Pocomoke City, July 9, 1956, *Reed* 1126.

2. *Bufo woodhousei fowleri* Hinckley. North of Pocomoke City, July 9, 1956, *Reed* 1127–1128.

3. *Hyla versicolor versicolor* LeConte. Northeast of Pocomoke City, July 9, 1956, *Reed* 1165–1166.

4. *Hyla crucifer crucifer* Wied. Conant, 1945.

5. *Pseudacris nigrita triseriata* (Weid). Conant, 1945.

6. *Rana clamitans* Latreille. 5 miles Southeast of Princess Anne, July 12, 1953, *Reed* 285; Conant, 1945.

7. *Rana catesbeiana* Shaw. Waterloo Farm, *Philip Wolle*; just north of Pocomoke City, July 9, 1956, *Reed*.

8. *Rana pipiens* Schreber. Swamp near Monie Bay, July 25, 1954, *Reed* 951.

9. *Ambystoma tigrinum tigrinum* (Green) 4 miles west of Princess Anne, *Philip Wolle*.

10. *Plethodon cinereus cinereus* (Green). Woods near Monie Creek, summer, 1938, *Reed*.

11. *Sceloporus undulatus hyacinthinus* (Green): Fence swift. Waterloo Farm, headwaters of Monie Creek, *Philip Wolle*; September 1941, *Reed*.

12. *Heterodon platyrhinos platyrhinos* Latreille: Hog-nosed snake. Waterloo Farm, on Monie Creek, *Philip Wolle*; McCauley, 1945, Map 13 indicates Crisfield and Dames Quarter.

13. *Opheodrys aestivus* (Linnaeus): Rough green snake. Waterloo Farm, *Philip Wolle* (18–24 inches long).

14. *Coluber c. constrictor* Linnaeus: Black racer. Waterloo Farm on Monie Creek, *Philip Wolle* (48 inches long); McCauley, 1945; Conant, 1945.

15. *Elaphe guttata* (Linnaeus): Corn snake. Waterloo Farm on Monie Creek, *Philip Wolle*.

16. *Lampropeltis getulus getulus* (Linnaeus): King snake. Westover, McCauley, 1945; Waterloo Farm, *Philip Wolle* (both varieties seen with white or yellow bands, 47 inches long).

17. *Natrix sipedon sipedon* (Linnaeus): Common water snake. McCauley, 1945; Waterloo Farm on Monie Creek, *Philip Wolle*.

18. *Thamnophis sauritus sauritus* (Linnaeus): Ribbon snake. McCauley, 1945, along the Pocomoke River in the southeastern part of the county.

19. *Thamnophis sirtalis sirtalis* (Linnaeus): Garter snake. Waterloo Farm on Monie Creek, *Philip Wolle* (4 specimens caught).

20. *Ancistrodon contortrix mokeson* (Daudin): Copperhead. Waterloo Farm on Monie Creek, *Philip Wolle*, 3 authentic specimens seen, head of one preserved.

21. *Sternotherus odoratus* Latreille: Musk turtle. Waterloo Farm on Monie Creek, *Philip Wolle*.

22. *Chelydra serpentina serpentina* (Linnaeus): Snapping turtle. Waterloo Farm on Monie Creek, *Philip Wolle*.

23. *Terrapene carolina carolina* (Linnaeus): Common box turtle. Waterloo Farm on Monie Creek, *Philip Wolle*.

24. *Chrysemys picta picta* (Schneider): Painted turtle. Waterloo Farm on Monie Creek, *Philip Wolle*.

25. *Malaclemys terrapin terrapin* (Schoepf): Diamondback terrapin. Crisfield, *Reed* 1039–1040; many seen by *Philip Wolle* at Crisfield; McCauley 1945, cites Crisfield (*McCauley* T46) and Deal's Island (*McCauley* T45).

POROSITY DETECTION IN PLATED COATINGS

Pores and other flaws seriously impair the quality of industrially produced electroplated coatings, diminishing their effectiveness as protective coatings for metals. Until now it has been difficult to estimate the relative merits of electrodeposits since no method of determining the gravity of defects was available. Recently, however, the National Bureau of Standards has developed a non-destructive procedure for ascertaining both the size and position of pores.[1] The method involves photographing an electroplated specimen exposed to radiation.

In earlier research, a technique applicable to plated coatings that have been removed from the basis metal was developed by the Bureau.[2] However, the likelihood of stripped-coating porosity differing from adherent-coating porosity led to further investigation of the problem. The present work was carried out for the American Electroplaters' Society by F. Ogburn of the Bureau staff and Margaret Hilkert of the Society's research fellowship at the Bureau.

In determining the location and size of pores, the specimen, a flat sheet of plated metal a few thousandths of an inch thick, is placed on a photographic film with the coating against the film emulsion. The assembly is held in a cardboard cassette, and the basis-metal side of the specimen is exposed to X-rays or radiation from a radioactive material. To insure good contrast, the X-radiation used must be soft. This requirement of low-energy X-rays limits the thickness of the basis material to several thousandths of an inch, since thicker metal absorbs too much of the X-ray beam and requires too long an exposure time. Radioactive iron, nickel, or cobalt held against the plated specimen in a cassette are also adequate sources of radiation.

After a suitable exposure time the film is removed and developed, satisfactory radiographs result from a 3- or 4-min exposure to an X-ray machine, and from a 24-hr exposure to 1μc of radioactivity. Wherever a pore existed in the coating, a black spot appears on the developed film. A fine-grain industrial X-ray film gives the most readable radiograph.

This radiographic method detects pits, voids, and inclusions in the coating to the order of 0.001 in. in diameter. Discontinuities in the basis metal may also be determined by radiographing the metal before plating.

[1] *The nature, cause and effect of porosity in electrodeposits, II. Radiographic detection of porosity in electrodeposits*, by F. Ogburn and M. Hilkert, Ann. Tech. Proc. Amer. Electroplaters' Soc.: 256. 1956.

[2] *The nature, cause, and effect of the porosity in electrodeposits*, by F. Ogburn and A. Benderly, Plating **41:** 168. 1954.